

READ BY
FARMERS
IN EVERY STATE AND TERRITORY.

THE AMERICAN FARMER.

Established 1819.

WASHINGTON, D. C., FEBRUARY, 1897.

78th Year. New Series.—No. 90.

STORED GRAIN.

Some Insects which Prey Upon It and Cause Great Loss.

By F. H. Chittenden, Assistant Entomologist, U. S. Department of Agriculture.

Stored grain is subject to injury by insects of several kinds, popularly termed "weevil." Upward of two score of species occur commonly in granaries, three living throughout their adolescent stages within the kernel of the grain. These three are the granary weevil, rice weevil, and Angoumois grain moth, the most injurious forms, both at home and abroad. The remaining species live on grain in the kernel, also when manufactured into flour and meal, and feed as well on various other edible products; hence, though of comparatively little importance as the authors of primary injury to the seed, they are very frequently the cause of serious damage to manufactured products and to grain that has suffered first from the attacks of the weevils or grain moth and has been kept for a length of time in store.

Nearly all of the grain-feeding species known in the United States have been introduced and are now cosmopolitan, having been distributed by commerce to all quarters of the earth, no insects being more easily carried from one land to another, since they breed continuously for years in the same grain and are unknowingly transported when in an immature state in the kernels. Most of our indoor insects are indigenous to the Tropics and do not thrive in the cold climate of our extreme northern States, but in the South they have become acclimated and there do their greatest damage.

NATURE AND EXTENT OF DAMAGE.

Aside from the loss in weight occasioned by the ravages of insects, grain infested by them is unfit for human consumption, and has been known to cause serious illness. Nor is such grain desirable for food for live-stock or for seed, its use in the latter capacity being apt to be followed by a diminution in the yield of a crop.

Of the insect injury to stored grain it has been estimated of Texas alone that there is an annual loss of over a million dollars, and that nearly 50 per cent. of the corn of that State is annually destroyed by weevils and rats. The loss from granary insects to the corn crop in Alabama in 1893 was estimated at \$1,671,382, or about 10 per cent.

There are seven other States subject to the same atmospheric and other influences as Alabama and producing in the aggregate a somewhat larger average yield of corn. Estimating the annual loss in the same proportions, we would have for these eight Southern States, viz., South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, and Arkansas, a total of nearly \$20,000,000. This is for corn alone, and does not take into consideration wheat and other grains or mill products.

In regard to the susceptibility of different grains to "weevil" attack, it may be said that unhusked rice, oats, and buckwheat are practically exempt, but the hull of barley offers less protection to the seed. Husked or hulled grains are naturally more exposed to infestation, and the softer varieties suffer far more injury than do the harder, flinty sorts.

In times when grain was kept long in store, and long voyages were necessary in its transportation, losses through the depredations of insects were much heavier than at present, these pests being exceedingly prolific and increasing enormously under such conditions. Rice, dampness, the latter inducing a condition of the grain termed "heating," also favor the undue increase of insect life, and the insects, when present in large numbers, cause, in some unexplained manner, a very perceptible rise in temperature to the infested mass. It is unnecessary to add that dampness and "heating" alone do not of themselves engender "weevil," every individual insect owing its existence to an egg deposited in the grain by the parent insect.

THE GRAIN WEEVILS.

All the various species of insects that attack grain are indiscriminately called weevils, or simply "weevil," but the only true grain weevils are the granary weevil and rice weevil.

These two insects resemble each other in structure as well as in habit. They are small, flattened, brown snout-beetles, of the family Calandridae. Neither is more than six-tenths of an inch in length, but their rate of development is so rapid that they do an almost incalculable amount of injury in a short period of time. Their heads are prolonged into a long snout or proboscis, at the end of

which are the mandibles; their antennae are elbowed and are attached to the proboscis.

THE GRANARY WEEVIL (*Calandra granaria* Linn.)

This moth has been known as an enemy to stored grain since the earliest times. Having become domesticated ages ago, it has long since lost the use of its wings and is strictly an indoor insect.

The mature weevil measures from an eighth to a sixth of an inch, is uniform shining chestnut-brown in color, and has the thorax sparsely and longitudinally punctured, as indicated, much enlarged, at fig. 1, a.

The larva is legless, considerably shorter than the adult, white in color, very robust, fleshy, and of the form shown in the illustration (b). The pupa, illustrated at c, is also white, clear, and transparent, exhibiting the general character of the future beetle.

The female punctures the grain with her snout and then inserts an egg, from which is hatched a larva that devours the mealy interior and undergoes its transformations within the hull. In wheat and other small cereals a single larva inhabits a grain, but a kernel of maize furnishes food for several individuals.

The time required for the completion of the life cycle varies with the season and climate, and the number of generations annually produced is consequently dependent upon temperature. The Midsummer period from egg to adult is about six weeks, and there may be, under favoring conditions, four or five broods in this latitude and six or even more in the South.

This species is injurious in wheat, maize, barley, and other grains and attacks also the chick-pea (*Cicer arietinum*), a food product of the Tropics. Unlike the moths which attack grain, the adult weevils feed also upon the kernels, gnawing them for food and for shelter, and, being quite long-lived, probably do even more damage than their larvae. This species is very pro-

ductive of eggs for live-stock or for seed, its use in the latter capacity being apt to be followed by a diminution in the yield of a crop.

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THE GRAIN MOTHS.

THE ANGOUMOIS GRAIN MOTH (*Sitotroga cerealella* Ol.)

This moth received its name from the province of Angoumois, France, where it is known to have been injurious since the year 1736. In this country, where it is familiarly but incorrectly called "fly weevil," it is said to have been recognized as early as 1728. From the seat of its supposed introduction, in North Carolina and Virginia, this moth has spread to neighboring States in the South, where it does incalculable damage, and to the southern portions of the

In the process of thrashing or cleaning much infested grain is blown out with the chaff and dust, and the moths and many adult weevils are killed by the agitation which the grain receives; but the immature forms of these insects, concealed in the kernels as eggs, larvae, and pupa, are apt to survive this treatment, and further measures are necessary for their destruction.

For this purpose a quarantine bin is desirable, to be as nearly airtight as possible, in which the newly thrashed as well as the infested or suspected grain can be fumigated with bisulphide of carbon.

Fresh grain should not be exposed to insect attack by being placed in bins with "weeviled" grain, or even housed under the same roof with such grain. If before storing in buildings that have been infested, the old grain be removed, the bins thoroughly cleaned, floors, walls, and ceilings brushed and scrubbed, the chances of infestation will be reduced to a minimum. If the storehouse has been badly infested, fumigation of bisulphide is necessary.

In times when the Angoumois grain moth was so injurious in France a number of machines were devised for the treatment of infested grain. Into these the grain is poured and revolved while exposed to heat or subjected to a violent agitation which kills the contained insects.

Cleanliness will accomplish much toward the prevention of injury from warehouse pests. The cause of a great proportion of injuries in granaries, mills, elevators, and other structures where grain and feed are stored being directly related to a disregard of neatness. Dust, dirt, rubbish, and refuse material containing sweepings of grain, flour, and meal are too frequently permitted to accumulate and serve as breeding places for a multitude of injurious insects.

The floors of the storehouse should be frequently swept, and all material that has no commercial value burned.

A certain amount of attention has always been given to the construction of the storehouse with a view to the exclusion of insects, and, with the advent of the flour moth, our modern mills are being fitted with reference to its peculiar habits.

The ideal farmer's granary, from the standpoint of insect ravages, should be built at some distance from other buildings and the rooms constructed as to be near vermin proof as possible. The doors should fit tightly, and the windows covered with frames of wire gauge to prevent the passage of insects. The floor, walls, and ceilings should be smooth, so as not to afford any lurking places for the insects, and it would be well to have them oiled, painted, or whitewashed for further security. A coating of coal tar has been strongly recommended for the latter purpose. Such measures are not an absolute necessity in cold and temperate climates, but in the more heated atmosphere of our Southern States whatever possible should be done to lessen the chances of damage.

The value of a cool place as a repository of grain has been known of old, and a building in which any artificial heat is employed is undesirable for grain storage. The "heating" and fermentation of grain, as is well known, is a productive source of "weevil," and this

PREVENTIVE MEASURES.

A limited number of insects, like the Angoumois grain moth in the extreme South, enter the grain in the field, and certain precautions are therefore necessary to prevent their access to the granary. This is accomplished, first, by harvesting as soon as the grain is ripe; second, by thrashing as soon afterwards as possible.

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should be prevented by avoiding moisture and by ventilation.

The storage of grain in large bulk is to be commended, as the surface layers only are exposed to infestation. This practice is particularly valuable against the moths, which do not penetrate far beneath the surface. Frequent agitation of the grain is also destructive to the moths, as they are unable to extricate themselves from a large mass, and perish in the attempt. The rice and granary weevils, however, penetrate more deeply, and, although "bulking" is of value against them, it is not advisable to stir the grain, as it merely distributes them more thoroughly through the mass.

Many remedies have been proposed for use against stored-grain insects, mostly of impractical or doubtful utility, and a long list of such substances, which are chiefly of a supposed repellent nature, could be given. The few of these

CRIMSON CLOVER.

Experiments to Study the Influence of Time of Seeding.

(Report of the New Jersey Experiment Station.)

These experiments were carried out upon the College Farm, and upon the farm of Thos. J. Beans, of Moorestown. The character of the soil upon these

protection to keep alive a rather thin stand of plants, but these have so developed that they make quite a demonstration, so tall and many-stalked are they. (See cut No. 1.)

The next was sown Aug. 4, on ground plowed, turning under pea vines after peas had been picked off, and seed was harrowed in with "Thomas' Timothy Harrow." The specimen sent is an average one from the coarsest sand. (See cut No. 2.) Where the land descends to where there is some loam the plants



are larger, and very badly lodged, as is somewhat on the coarser sand. It makes such a display that it attracts much attention, and is on soil on which we have never succeeded in raising red clover during 30 years, though we have never tried it there with a summer sowing.

On the College Farm the dates of sowing were Aug. 4 for No. I, Aug. 13

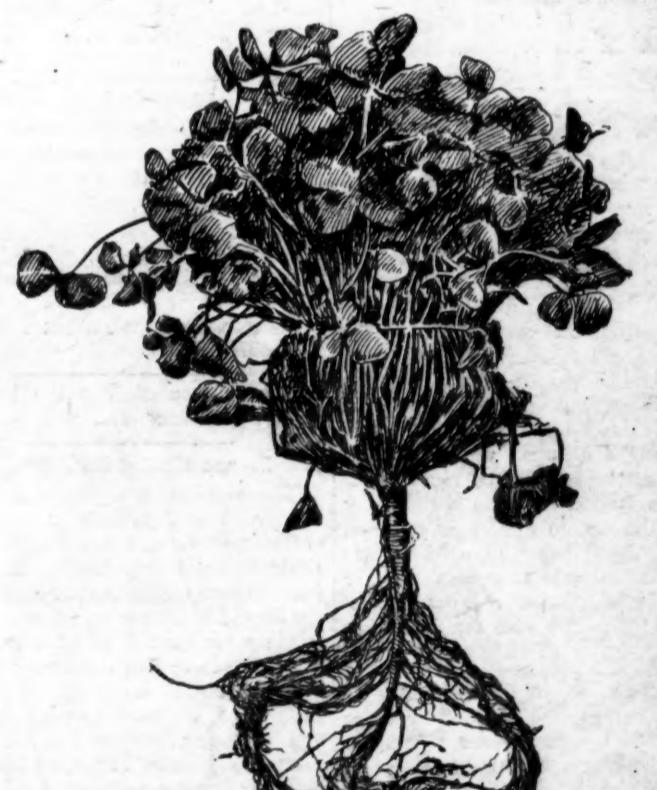
for No. II, and Aug. 29 for No. III, and Oct. 1. Representative specimens of the plants from the first seedings, the seed of Oct. 1 being a failure, were taken April 28, and are shown in the accompanying cuts. The plants represented by Nos. I and III were seeded on raw ground after a heavy crop of fodder corn had been removed, and No. II on adjoining land from which no crop was harvested.

Specimens were taken by Mr. Beans on May 23, and are shown in the accompanying cuts. Mr. Beans' report is appended:

"The first sown was covered by an 'Acme' Harrow on July 11, at last dressing of watermelons—rows 10 feet apart, about half their length sandy and half with some loam. During some hot days, soon after the plants started, they were all destroyed. The same result followed sowing early in July a previous year during some hot days. We have had the thermometer to indicate in the sand a temperature of 127° F. to 140° F. at midday, with bright sunshine.

"The next sowing was on July 21,

among late citrons at last dressing, and among tomatoes alongside. There was a good catch, but subsequent sunshine destroyed the plants among the tomatoes, but the citron vines grew



row between the rows, and was along side the previous sowing. The catch was satisfactory; the growth so vigorous that it was with difficulty we plowed it

under on the 15th of May, and over it

to-day (May 23) we planted sweet potatoes, the ground being in splendid condition. The specimen sent (see cut No. 2) was disturbed in ridging up, and I

Continued on second page.



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A Few Hens This Month.

Make preparations now, and not after the chicks hatch. The last of February is none too soon to commence to set the hens, so that by March we will be under full sway. These early chicks will have to have other protection than simply a good coop. A long shed, facing south, makes an excellent wind-break under which to place the coops. This shed can be low—for economy—say two feet high at back and five feet high at front. It should be from five to eight feet deep, with open or inclosed glass front. Run a tight board fence along the west side of yard, to keep out cold winds. The coops can be placed under this shed side by side, and boards or wire netting can fence each brood in a little yard until the little chicks are strong enough to get out of their neighbor's house on the double quick when Mrs. Hen gets after them. Young turkeys are very stupid in this way; they will often run round and round a cross hen until killed, instead of trying to escape. These early chicks will require more care than later ones, but they will repay us by more rapid growth, and if we sell them will bring twice as much per pound, or, if we save the pullets, they will repay us in extra eggs. Early chicks always do better than late ones. They grow more rapidly and seem to be stronger. The trouble with early hatching is the scarcity of sitters. If the hens have been laying all Winter, and they have been fed liberally, then we may expect sitters. A fat hen is a poor layer generally, but all such will be apt to furnish us with sitters, providing they have been laying.

An Ingenious Table.

An ingenious statistician has drawn up a table to show how many eggs the various kinds of domestic fowls lay per annum, and how many of the eggs go to the pound:

Geese, 4 to the lb.; 30 per annum.

Pidgeon, 9 to the lb.; 150 per annum.

Bantams, 16 to the lb.; 100 per annum.

Hamburgs, 9 to the lb.; 200 per annum.

Turkeys, 5 to the lb.; 30 to 60 per annum.

Game Fowl, 9 to the lb.; 160 per annum.

Leghorns, 9 to the lb.; 200 per annum.

Plymouth Rocks, 8 to the lb.; 150 per annum.

Langshans, 8 to the lb.; 150 per annum.

Brahmas, 7 to the lb.; 130 per annum.

Ducks, 5 to the lb.; 30 to 60 per annum.

The Best Way to Begin.

The best way to enter the poultry business is to begin with a small flock and gradually enlarge, the object being to learn and also to breed for the kind of fowls desired. No one can succeed who goes on the market and buys his hens, of all sizes, breeds and characteristics, for he will know nothing of them, and may lose all from disease or inferiority of the stock. By breeding his stock he gets those best suited to the objects desired. It takes at least a year or two to bring together a flock of several hundred choice hens, for they are not often sent to market except in small numbers. The market is filled with fowls that are sold because they are not serviceable on the farm as on the stall.—Hon. F. E. DAWLEY.

The Best Breeds to Cross.

If all you want is eggs and table fowls, select some good large, lively young hens and buy a Brown Leghorn cock, and you will get what you want. Or, if you want to do a little better than that, get some hens of any large breed, Brahma, Cochins, Plymouth Rocks, or Wyandottes, and mate with the Leghorn aforesaid. Or, get some pure White Plymouth Rock hens and a pure-bred White Leghorn cock, and you will be proud of your snow-white beauties and they will lay equal to Leghorns. Or, again, get some White Wyandottes, for they are an excellent all-round fowl and handsome enough for anybody. Or, if you prefer, get some other pure breed. This is a free country up to date, and there are enough breeds to select from.

White Wyandottes.

This breed has enjoyed great popularity for the past few years, and is the equal of any breed for general-purpose fowl. They are very hardy and mature early. In Northern markets they are much sought after for early broilers. Having a low rose comb, many prefer them to all others, as they can withstand the cold much better than some other breeds. Their legs, beak and skin are a golden yellow, resembling creamer butter. Being more compact than the Plymouth Rock, they make even a better market appearance. The hens being splendid setters and mothers, are valuable for that purpose also. Those who do not fancy a white fowl, there are other Wyandottes, viz., Silver, Golden, Buff, or Black, all of which are identical, save in color. Cocks weight eight and a-half, hens six and a-half.

Here is a New Swindle.

A comparatively new scheme for swindling farmers has made its appearance at Danville, Pa. The agent of a fictitious grocery house offers to exchange groceries for eggs. The farmer gives his note for whatever groceries he wants, and verbally agrees to pay for them with eggs. The swindler gives his note in return.

The farmer's paper turns up at the local bank and he is compelled to pay it, but no groceries appear.

Hen vs. Cornfield.

One hen is equal to an acre of land, according to the calculations of a Central Branch, Kan., farmer, who figures that whereas the ground produces in a year 20 bushels of corn, worth \$2, the hen, which costs less to take care of, lays 10 dozen eggs, worth \$1.50.

Mating Bronze Turkeys.

If the flock of turkeys has not already been mated up for the year no time should now be lost. Select both tom and hen with care and let the first requisite be a good, strong constitution. Choose a male bird having a deep body and full, round breast. A matured bird weighing 35 pounds is as heavy as can be used with safety. A young tom weighing 25 to 30 pounds is large enough for best results, but he should be symmetrical in shape, with color and wing bars as perfect as possible. Select a bird with large bone, the legs being of medium length, strong and sturdy and set well apart. Those of young birds should be black or dull reddish-brown, but they will become pink with advancing age. In selecting females, choose the same general shape as that described for the male, but if he is weak in any of the points named the difficulty may be corrected by having hens particularly strong in that point.

My experience has proven the wisdom of using medium-sized hens for breeders, those weighing from 15 to 18 pounds being the most satisfactory. A hen weighing above 22 pounds is liable to lay irregularly, and a very large percent of her eggs will be infertile. A hen is fit for a show bird. As a breeder she is practically worthless.

After an experience of nearly 25 years in breeding turkeys, my ideal of a flock is a young tom weighing 30 pounds mated with 10 yearling hens, of uniform shape, weighing 18 pounds each, all to be handsomely bronzed and clearly and evenly barred in wing feathers with clear white, not tawny tips to the feathers.

I believe that larger flocks and stronger birds could be raised from this mating than if the weights should greatly exceed these. This, however, applies to breeders who want large flocks rather than a few extra heavy birds for the show room.

As late as April 1st is a good time to set eggs for early poult. They will then come off by the first of May, which is a good time to put them on grass, though, even then, we sometimes have a cold, rainy spell, and it is extremely difficult to carry poult through a protracted rain, although they may be well housed, dampness being their worst enemy after excepting the arch enemy of all poultry—lice. It is better to gather the early-laid eggs and keep them in a moderately-warm room (with temperature at 50 or 60 degrees) until ready to place under the hen. Care should be taken to turn the eggs every two days. Later in the season, if the nests are in good places, it is better to leave them undisturbed, being careful to note the day the turkey begins sitting, in order to be ready to take the poult off when 24 hours old. In another article I shall have something to say about the care of the poult.

Mrs. S. N. King, in *Poultry Tribune*.

The Sugar Bowl.

The people of Washington have found that they can raise sugar beets to advantage, and that at \$4 a ton they are the most profitable crop that they can produce. The State of Washington is exceptionally well adapted to sugar beet production. The industry offers the farmers of that State another and, to them, a new crop, one for which the market cannot be glutted for many years to come. They should avail of it as soon as possible.

New Mexico has made a great success of the sugar beet.

Sugar growing in Florida receives a boom by the announcement of the extensive St. Cloud sugar plantation, near Kissimee, has been purchased by a syndicate of Cubans; that the capacity of the sugar mill will be doubled at once, and 2,000 acres of cane will be planted this Fall.

The St. Cloud plantation was established by the late Hamilton Diston, of Philadelphia, who undertook the development of sugar growing in Florida on a large scale. He invested a quarter of a million dollars. The Cubans will take possession as soon as the conveyance papers have been completed. The purchase is regarded as the most important movement ever made in Florida looking to the development of the sugar producing resources of that State.

Julius Bartholomew is to establish the best sugar industry in South Carolina. He will bring over 500 families from Saxony. He has secured 18,000 acres of land in South Carolina and will divide it into farms of 25, 50, and 100 acres.

Sugar-beets are to be planted in Summit County, O., next summer as an experiment. If the beets yield 12 per cent. of sugar, capital is ready to establish the beet sugar industry there.

Sugar Beets in Wisconsin.

The following figures are given as to the cost and profit of raising sugar beets in Wisconsin:

Cost per acre	
Handing and laborers	\$ 1.50
Seed	1.62
Planting	1.50
Plowing	1.50
Hoeing	5.00
Cultivating	2.00
Harvesting	9.00
Hauling	10.25
Total	32.37
Yield	
Tons	114
Per ton	\$ 4.50
	\$50.62
	32.37
Profit	\$17.25

THE APIARY.

Some Peculiarities of the Queen Bee.

The young queen while yet in the queen cell seems to be conscious of outside conditions, for she will answer the pipings (as it is termed—a que-que) of the old queen which is about to leave with a swarm.

The queen after cutting a circular hole in the end of the cell, emerges, and though the cell might be a shelter to her, she never returns to it, but rather depends upon the loving homage of her subjects. After her virgin flight and mating with a drone, she never leaves the hive except when she goes with a swarm.

The queen bee has a sting and is expert with it upon a rival queen, but she seldom if ever stings a rival person.

Confined in a cage with drones she usually ends their earthly career with her sting; her motto seems to be "no males tolerated here."

A queen bee, unless prevented by her subjects, will tear open queen cells and destroy the immature occupants.

If queen during the flight of the swarm alights for a moment upon some object and then takes flight again, bees by the dozen will hover over and run over the spot for some moments after she has flown.

At such a time let the bee master catch a queen and hold her an instant between thumb and finger; the bees after her release will alight upon the fingers that came in contact with her.

Place a queen in a wire-cloth cage and attach it to the hat, and the whole swarm will alight upon it.

If the queen is killed and thrown upon the ground near the hive a knot of bees will gather over her remains for some minutes.

The queen will lay as high as 3,000 eggs per day and keep it up for many days.

At the above rate she produces her weight in eggs every three days.

If a queen by chance enters a neighboring hive she is immediately inclosed in an angry crowd of bees, and if not stung to death immediately she is hugged to death in a close knot of bees.

The queen is the leading factor in the life of the hive, because she is the mother bee.

Shall We Use a Tall Section?

The 4x4x1 $\frac{1}{2}$ section for comb honey has been the standard for several years, but certain progressive beekeepers are now advocating a section 3 $\frac{1}{2}$ x5x1 $\frac{1}{2}$. The reason for the change is from the fact that it stands taller on the store shelves and makes a more inviting appearance than the square section. There is much in this idea, and some of our New York beekeepers have produced honey in that style of section for several years.

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Vermont Bee-Keepers.

At the session of the Annual Convention of the Vermont Bee-Keepers' Association, held at Vergennes, these officers were elected:

President, H. W. Scott of Barre; Vice-Presidents (by Counties), Addison, Miss M. A. Douglass; Chittenden, D. H. Howe; Franklin, F. M. Wright; Lamoille, J. W. Smith; Orange, M. F. Cram; Rutland, V. N. Forbes; Secretary, M. F. Cram; Treasurer, H. L. Leonard.

"Points to be considered in locating an apiary" was presented by M. A. Everest, followed by a discussion. The next convention will be in Burlington, Jan. 18, 1898.

Buyers' Bargain Year.

This is the tenth year that Mr. F. B. Mills, the Rose Hill, N. Y., Seedsmen, have been in business. His present ranks is a memorable year for his customers, and has conceived the idea of a year of seed bargains. His Bargain Catalogue is filled with unusual offers, among which are 13 great collections of vegetable and flower seeds at 25 cents each, and 236 premiums to those who sell the largest numbers of these collections. A present will be given with each order, however small, and a watch to every one who sells 25 collections.

Tobacco.

A single order for 1,000,000 pounds of smoking tobacco was a new record for that line of business recently achieved by a Virginia tobacco firm.

W. H. C. BROWN & CO.

Established - - 1819.

78TH YEAR.

THE AMERICAN FARMER.
"O fortunatus natus sis bona norit agri-
culturis!"—VIRG.Published Monthly at Washington, D. C., and
Baltimore, Md., byThe American Farmer-Company,
522 New York Ave., WASHINGTON, D. C.SOUTHERN EDITION OFFICE:
225 East Baltimore Street, Baltimore, Md.

Entered at the Postoffice at Washington, D. C., and Baltimore, Md., as second-class matter.

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Unless specially directed for the Southern Edition, all subscriptions will be entered for the General Edition.TO ALL TO WHOM THIS PAPER
SHALL COME.

Greeting: This paper is sent you that you may have an opportunity to see it and examine it, with a view to subscribing. We ask you to compare its contents, objects, and price with those of other papers, and see if you do not come to the conclusion that you ought to have it; that you cannot afford to do without it. We can assure you that if you send in your name for one year that you will find it one of the most profitable investments that you can make. We hope to make and keep it so interesting that you will think that every number more than repays you for the subscription price for a year. Please call your neighbor's attention to the paper.

KENTUCKY is having a turnpike war. There are 3,000 miles of highway in the State controlled by private companies. Public sentiment has been aroused against these on account of alleged excessive tolls, and by remembrance of the fact that six-tenths of the roads are really public property, having been built at the expense of the Counties or the State. An act was passed in 1890 to enable the Counties to purchase the roads, but the companies held their property at such high figures that this process has been attended by difficulty. Finally, some months ago mobs of from 40 to 100 men, armed with guns and axes, began systematic raids on the tollgates, smashing them over long stretches and turning the keepers not to reconstruct them. So far gates have been destroyed presenting 1,500 miles of pikes, valued \$4,000,000.

SANTA CLARA COUNTY, Cal., leads the Pacific Coast, if not the country, in the matter of good roads. It has now a total mileage of 775 miles of excellent highways, of which more than 400 miles have been gravelled at a total cost, during the past 10 years, of \$960,376, or an average of \$1,110 a mile. These roads are kept in good order all the time; it having been found that repair is cheaper than reconstruction. All wheel-ruts and chuck-holes are immediately filled with gravel, and the draining ditches kept open. In addition, the roads are thoroughly sprinkled in the dry months. It was found that this was a great preservative, as well as a comfort to those who used them. The County has tried convict labor, but found that the expense of keeping and transportation was very heavy. It is now proposed to erect buildings where the County prisoners can prepare the stone, which will then be placed on the roads by ordinary labor.

THE Tenth Biennial Report of the Kansas State Board of Agriculture is a work of the greatest value, not only to the farmers of Kansas, but to those of other sections of the country, for it is packed full of practical, every-day information on matters of the highest interest to every tiller of the soil. The contributors to it are earnest, practical farmers, who write of what they actually know, and which they have demonstrated by experience and observation.

Too much credit cannot be given to its editor, F. D. Colburn, who has sought out the contributors who were sure to have something of value to tell their fellow-husbandmen, and who has supplemented their work by valuable figures and conclusions. It is published at Topeka.

THE corn crop of 1896 is estimated by the Government at 2,283,875,000 bushels. This is greater than the 1895 estimate by 132,875,000 bushels. The average farm price per bushel is given at 21.6 cents, making a total value of the crop of \$491,007,000.

WHEAT PROSPECTS.

There is little new to be said about the prospects of the wheat market. Everything is a rehash of what has been said over and over again for the past 90 days. There have been at least 10 official Russian crop reports, each differing slightly from the other. There has also been a fresh estimate on the world's wheat crop, the *Corn Trade News*' latest making it 96,000,000 bushels short of last year. A few months ago *Beerbohm* was out with an estimate of 136,000,000 bushels short. It is generally conceded that the Argentine crop is short, as at this time of the year that country commences to ship heavily; but last week it only sent out 16,000 bushels, against 615,000 bushels last year.

A shortage of 10 to 15 per cent. in the French area, accompanied by a condition of 62, against 89 last year, is going the rounds, and has been a stock card for 60 days, the same as the loss of 2,000,000 acres in southern Russia. Added to these factors are the short crops in Australia, India, and South Africa, and their buying in this country to supply the deficiency.

In this array of bullish information may be included the small receipts, Winter wheat points getting only 184,000 bushels last week, while their shipments were 200,000 bushels in excess of their arrivals, the decrease in the stocks, and the reports of crop damage in the South and Southwest. Here you have the entire bullish situation. What is more, everybody knows it, and has been cognizant of it for 90 days. Speculators have bought wheat on it during all that time, and whenever the market shows strength those who have any money are buying more wheat.

Foreigners are expected to come in and buy our wheat freely between now and July. When they do the entire bull contingent expects to unload on them at higher prices. It should be remembered, however, that foreigners are already long millions of bushels of cash and futures of wheat, and also a large quantity of flour that has not been shipped, and may never be. Hence they are in a position, however, to get along without buying heavily for the present. The only ones who need be uneasy are those who have sold the stuff to them, if they are without a stock on hand.

Bradstreet's estimates that the world's available by July 1 will be 75,000,000 bushels, against 105,000,000 bushels last year, and 131,000,000 bushels in 1895. Cash wheat is being held back all over the world for higher prices, and occasionally a section is heard from that has a little that it desires to sell. A free movement, however, is not expected until crop prospects become more certain or the price advances materially.

An increased demand for corn products is attracting attention at Chicago. This demand comes from the East and South, indicating that the cheapness of corn is increasing its consumption. Cornmeal is selling there at \$8 per ton or 80 cents per barrel, which is sufficient inducement to bring it into more general use. Another factor is the poor grading of the corn from Iowa, about 30 per cent. of receipts being low grades. Of the total arrivals last week, 2,981 cars, only 140 cars inspected contract. Were it not for the large stocks, at visible supply points, and in the West, this would be an important bull factor. The low grades sold at prices ranging from 10½ cents to 18 cents, the bulk going between 12½ cents and 18 cents. The inside figures are so low that it will prevent shipments from the West, as the farmer gets little or nothing.

The British millers are fighting American flour bitterly and they are charging through the papers that it is adulterated. The adulterant, they say, is cornmeal, ground so fine that it cannot be detected. This would strike the American bread-eater as very funny. The test of the loaf is in the eating thereof, and if the flour "adulterated" with cornmeal makes just as palatable a loaf as without, let them go ahead "adulterating" as much as they want.

Gov. Pingree is an earnest advocate of a bounty of 1 cent a pound to develop the production of sugar in Michigan. There is no doubt that the sugar beet would do well there, and be a profitable addition to the Michigan farmer's products.

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FREE ALCOHOL FOR THE ARTS.

Congress and the Treasury Department are still dawdling over the question of free alcohol for the arts and sciences. This is a matter that should be settled promptly, in the interest of very many important industries. Druggists, manufacturers of flavoring extracts, photographers, hatters, varnish-makers, tobacco manufacturers, makers of enameled ware, fulminating powders, and dyes all use immense quantities of alcohol. They should have it as cheaply as possible. The Governments of other countries, which impose high taxes upon alcohol used as a beverage, provide their manufacturers with free alcohol, and ours should do the same.

Prunes in Oregon.

About 26,000 acres are devoted to prune growing in Oregon, mainly in the Willamette and Umpqua Valleys. The Willamette Valley possesses a more humid climate than some of the other regions, and in consequence fungus diseases are rather more prevalent, while there are not so many insects pests. For the successful growing of prunes a rich sandy soil at least four feet deep is best, with a well-drained black loam as second choice. The majority of prune trees in Oregon are grown on peach stock, but the use of myrobalan plum stocks is to be preferred, as the range of soils upon which peaches will thrive is small, since they require better drainage than plums. Prunes unite better with plum stocks. Plum stocks are less susceptible to borers and diseases, and in general in other fruit regions plum roots give better results. Good drainage to obviate puddling of the surface during the rainy season and to allow of cultivation is urged. In some cases subsoiling may be necessary.

Pruning the tops and roots of the trees before planting and setting them in straight rows at a time when the soil is dry enough to crumble are advised, a distance of not less than 20 or 22 feet having proved the best. Early, clean hatching should be given, and in young orchards the land may be deeply plowed for a few years. The trees should be pruned to low rounded tops, having the branches well distributed on the different sides of the trunk. Much larger and better prunes can be obtained by thinning the fruits. This should be done when the prunes are quite small, and the quantity removed must depend upon the variety and vigor of the tree. It is believed that some varieties of prunes are inclined to be self-sterile, and that to provide for the proper fertilization of the flowers an orchard should be planted with mixed varieties. The shot-hole fungus, borers, and the green aphids were found to be the most abundant enemies of the prune.

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Pruning the tops and roots of the trees before planting and setting them in straight rows at

THE GARDEN.

Thayer's Berry Bulletin for February.

THE FARMER'S GARDEN.

Plan the berry garden as carefully as you would any farm building. Start right, and you save time in preparing the soil, in setting the plants, in cultivation, and in all the details of the work.

Make a complete drawing or plan of the new garden, and work to this plan in a regular, systematic way.

Take a piece of heavy paper, or a clean, smooth board, and draw 10 straight lines one inch apart and 25 inches long. These lines to represent 10 rows of plants seven feet apart. Now draw cross lines one-half inch apart the entire length of plat, making just 50 cross lines.

The intersection of each cross line with the long lines represents the exact point where plants should be set.

This requires just 50 plants to the row, the plants 3½ feet apart in the row and rows 17½ feet long.

Set strawberry plants just half this distance each way, 21 inches apart in the rows and rows 3½ feet apart.

Make a selection of the varieties you want, the number of each variety and the rows they are to occupy.

Write name of berry and number of plants on the lines selected. This plan requires one-quarter acre of ground, and will furnish a liberal supply of berries throughout the season for a large family. Every farmer should have such a garden.

Long, straight rows are easily and closely cultivated by horse or hand cultivator.

Fifty plants to the row may be purchased at 100 rates, thus saving in price of plants. Uniform and exact setting adds to beauty of garden and interest of grower.

The varieties to be selected depend much on soil, location, manner of cultivation, taste of grower, and other surroundings.

Select varieties known to do well in your locality if tested there, otherwise standard varieties that have done well over a large extent of country.

Order direct from responsible growers, thus being sure of good plants at moderate prices. High-priced novelties are generally disappointing.

The following varieties are recommended as doing well in most localities. The kinds and number for each row will give you early and late varieties, coming in succession during the season:

1st row. 50 Blackberries—25 Briar, 25 Snyder.

2d row. 50 Black Raspberries—25 Ohio or Older, 25 Nemaha or Gregg.

3d row. 50 Raspberries—25 Palmer, 25 Shaffer (purple).

4th row. 50 Red Raspberries—25 Marlboro, 25 Cuthbert.

5th row. 50 Currants—25 Red Dutch, 25 Victoria.

6th row. 25 White Grape Currants, 25 Gooseberries—Downing and Houghton.

7th row. 100 Warfield Strawberries, 7½ row. 100 Michel's Early Strawberries.

8th row. 100 Haverland Strawberries.

8½ row. 100 Bederwood Strawberries.

9th row. 100 Crescent Strawberries, 9½ row. 100 Parker Earl or Gandy Strawberries.

10th row. 18 Grapes—More's Early, Warden, Delaware, Brighton, and Concord.

As soon as ground is free from frost prepare it thoroughly. Extra care in preparing ground is essential.

Stake off the rows and set plants by line, following the plan exactly. You will then have plants true to name, and on your plat a complete record for future reference.—M. A. THAYER, Sparta, Wis.

Pedigree Strawberry Plants.

Pedigree plants or animals are those having a known line of ancestry—presumably good ancestry.

New varieties of strawberries originate from seed sown by man or nature. A variety thus originated propagates itself by means of runners which grow out from an old plant, take root and form young plants. A pedigree strawberry plant, as I use the term, means usually, but not always, one of the above kinds (for the ancestry of some of the best varieties is not known) which has been still further improved by repeatedly selecting plants noted for general excellence as fruit bearers, from whose runners young plants are obtained to set all new fields.

From these young plants—the most excellent ones—are again in fruiting time selected the most excellent ones, and so on indefinitely. But the berries should not be allowed to remain on these plants an hour longer than is necessary to prove the fruitfulness and general excellence of the plant. The berries should always be pulled off before they ripen or the seeds mature, which is the process so exhausting to the plant.

It is denied that this selection does any good at all, and asserted that one plant of any given variety is just as good as any other plant of that variety. That the assertion is erroneous I know from actual and repeated tests. I have long followed this plan of selection and proven that it does tell strongly in the improvement of a variety, provided of course that it is intelligently and persistently carried out. In fact, improvement in plant or animal can come in no other way.

To assert that every strawberry plant of any given variety is equally good no matter how the one may have been allowed to run down by neglect nor the other bred up by careful selection and high culture, is an error and an error of a very harmful kind.

It is an erroneous as to hold that one herd or strain of Jersey cows is as good

as any other herd or strain, although one might have been highly and judiciously fed and bred from only the best cows, and the other herd or strain had been starved and bred from scrubs for 20 generations.

Annual fertilizing with barnyard manure and some commercial fertilizer is considered necessary, and clean, shallow cultivation should be given until the end of Summer. Pruning in either bush- or tree-form is regarded as preferable to allowing old canes to remain on the plants.

Take Care of the Foundlings.

EDITOR AMERICAN FARMER: Many years ago, in plowing in my orchard, a small seedling strawberry plant was on the point of being turned under, but I saved it. It was what became the famous Capt. Jack, which is still retained by many successful growers.

I tried to grow the Cuthbert raspberry for 10 years, with very poor success; so much so that I routed out the whole row.

A few years ago, while cleaning up a little gully, I noticed a seedling raspberry plant, which was kept and nursed. Strong canes grew up in 1895, and in 1896 the little clump gave me more berries than the original row 50 feet long ever gave. I had no Cuthberts to compare with, but from recollections consider it exactly like the Cuthbert, from which it must be a seedling, the seeds being carried there by the birds. It is hardy, which the other was not. Quite a number of plants are now ready to set out, and if it continues to do as well as it did the past season, it will be valuable. Many of our finest fruits are accidental productions; hence the advice to give them a chance.—S. MILLER, Bluffton, Mo.

Growing Cabbage Plants.

When a large number of plants is required, it is cheaper to grow them than to buy them at 25 cents the hundred. Five cents' worth of seed will produce 1,000 plants, and, as there is no need to set them out until July for Winter use, there is plenty of time to grow them in the open ground.

Soja Beans.

The Vermont Station reports: Soja beans green and black medium varieties, were grown in 1893, as well as in 1894, and proved satisfactory each year. No other leguminous hoed crop which we have grown has given us better returns in tonnage of green fodder, dry matter, or protein. The green variety this year yielded at the rate of six and one-half tons green fodder, two tons dry fodder, and nearly a quarter of a ton of protein to the acre. The crop was poorer in protein than last year's growth. Although good growths were made of hairy and Spring vetches, with and without oats, our experience with these crops for several years does not lead us to consider them equal to peas and oats. Serradella yielded about a ton of dry matter to the acre. We recommend it as a promising forage crop.

Kafir Corn.

I had a very fair opportunity to test Kafir corn last year, as to drought and all, and I cannot see that it possesses any advantages in any respect over our common corn, either for grain or forage, and for the latter it is not nearly so satisfactory to me as sorghum. Sorghum is a tenderer plant to eat than Kafir corn, and stock like it better, either when green or dried. It may be in the sand and where there is no rain Kafir corn may be just the thing, but in any part of God's country there are other plants that are better, in my way of thinking.—CHAS. DEVINE, Iowa.

The Improvement of Unproductive Black Soils.

The unproductive areas of deep, black humus soils known as "bogus" lands occurring in central and northern Indiana, and in which many cases were formerly marshes or the bottoms of old ponds, shown on chemical examination none of the characteristics usually assigned as the cause of unproductiveness.

Experiments on two farms during four years indicate that the use of kainit and straw temporarily improved the drainage, and thus increased the productivity of these soils. A system of drainage which taps the water-bearing gravel underlying the humus soil and lowers the water level to at least 40 inches by removing the cause of unproductiveness insures permanent improvement.

Currants.

For propagation of currants the cuttings method is preferred, the cuttings to be made from ripe, hard wood in the Fall, stripped of their foliage if need be, and either planted at once, if early in the season, or tied in bunches and buried about six inches deep in the earth until Spring, with the buds upward to keep the top buds dormant. In this case the cuttings may be set out as soon as the ground is fit to work in the Spring.

The soil for growing cuttings should be rich, well drained, and thoroughly pulverized, and the cuttings should be placed in long trenches with the top buds just above the surface. Strong one-year-old plants are regarded as the most desirable for setting. Directions are given for propagation by layers and from seed, the latter method to be used when it is desired to originate new varieties.

Currants may be planted either in fields to themselves or in vineyards

MILK IS AN EMULSION of butter. You don't need

to be told that milk is an easier food than butter. Scott's Emulsion is an easier food than cod-liver oil. It is half digested; almost ready to enter the blood and help make tissue, nerve and bone. It is rest for digestion; it stimulates, helps, restores digestion; and, at the same time, supplies the body with a kind of nourishment it can get in no other way.

THE AGRICULTURAL SCHEDULE.

The McKinley Rates to Be Restored.

The Republicans in the Ways and Means Committee have decided to restore McKinley rates all along on agricultural products, particularly on those coming from Canada, and are making the rates specific instead of ad valorem, thus corresponding with the McKinley act.

The first five paragraphs in the McKinley act, which imposed duties on horses, mules, cattle, hogs, sheep and other live animals, not specially provided for, were all consolidated in one paragraph in the Wilson law, and these animals put under a duty of 20 per cent. ad valorem. The McKinley classification rates will be restored, with the exception of cattle, where the rate will not be quite so high as it was in the McKinley act, and still will be much greater than under the Wilson law.

Cattle under the McKinley act, when more than one year old, paid a duty of \$10 per head, and less than one year old \$2 per head. Under the 20 per cent. duty of the Wilson law, cattle have been coming into this country in a way greatly to injure the American growers.

The report of the Bureau of Animal Industry of the Department of Agriculture recently sent to Congress shows that 219,814 Mexican cattle were imported and inspected during the last year. From Canada there were, according to the same report, 317,038 sheep imported.

Under the McKinley act in 1892 there were only 2,169 cattle imported into this country altogether, compared with 219,814 imported from Mexico alone during the last year. This enormous increase in the importation of cattle is a great injury to American growers, and a stop will be put to a considerable extent by a partial restoration of the McKinley rate of duty and making it specific. This is an illustration how farmers and cattle-growers have been injured by the new tariff law.

The 317,038 sheep that came in from Canada, to say nothing of the Canadian wool that came in free and mutton is a further illustration of the injury to the farmer, under the new law. There were \$3,300,000 worth of live animals brought into the United States last year under the Wilson law, and this, notwithstanding the fact that these animals were valued in many cases at half the value put upon similar animals in 1892.

PROTECTION TO SUGAR.

There Will Be No Bounties, But a Specific Duty.

The question of what shall be done with sugar in the next tariff, and whether or not a bounty shall be paid, has not yet been taken up, but the probabilities are that no bounties will be authorized by the report of the Ways and Means Committee. The duty on sugar will be retained, that much has been settled, and the rates will be made specific.

Under the present law, raw sugar is persistently undervalued. The duty is 40 per cent. ad valorem, and the value of the imports is so large that the saving by undervaluation of a small percentage of the duty is an immense gain to the importer, the sugar trust.

In Great Britain sugar is admitted free, and therefore there is no reason for undervaluation. The average price of refining sugar imported into Great Britain for the 12 months beginning July, 1895, and ending with June, 1896, was \$2.45 per 100 pounds. For the same months the average price for the same grade of sugar imported in the United States was \$2.14 per 100 pounds. The difference, 31 cents per 100 pounds, appears to be a small matter, but upon an importation of 2,000,000 tons, the total undervaluation is \$12,400,000, and the saving to the sugar trust in customs duties, \$4,960,000.

In revising the customs tariff, the temptation to defraud the revenue will be eliminated as much as possible, in justice to the honest importer, the home producer, and the Government.

The Louisiana Sugar Men.

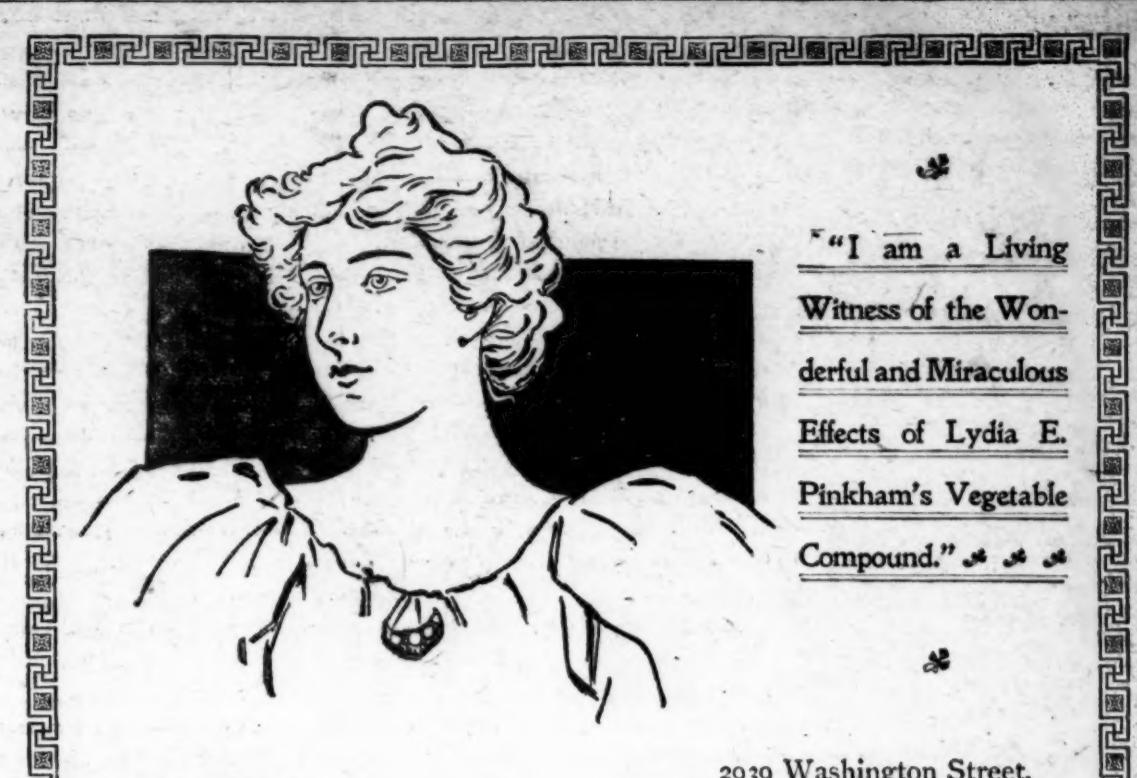
The sugar-growers of Louisiana are in Washington again for a further large appropriation for bounties. The last Congress appropriated \$5,000,000 to pay bounties claimed to have been earned before the Wilson law was passed. Although the Secretary of the Treasury paid that money out pro rata, it did not prove sufficient by \$1,048,000 to pay all the claims filed with the Treasury. This additional sum is now asked for.

It is doubtful if the money is allowed by the Committee on Appropriations. In fact, it is almost certain that under the present condition of the Treasury the money will not be appropriated. As Louisiana furnished votes to pass the bill repealing the bounty, and has sent Members of Congress to Washington to fight all Republican tariff measures, it has not much of a claim on the Republicans to appropriate a million dollars for this purpose at this time.

The Wilson tariff law could not have passed the Senate except for Louisiana votes, and as the Treasury is running rapidly behind, as it has been doing ever since this law was which Louisiana is responsible, was put upon the statute books, the bounty claim may have to wait.

Inspection of Cattle.

The Committee on Agriculture has prepared a bill which will be reported to the House of Representatives, and which proposes to compel the slaughterhouses to pay one-half the expenses of the Government inspection of the cattle slaughtered, the Government to bear the other half of the expense. While the bill will be introduced at this session, it will not be pushed, as the Committee desires that the subject shall



"I am a Living Witness of the Wonderful and Miraculous Effects of Lydia E. Pinkham's Vegetable Compound."

To All Sick Women:

I feel it my duty to publish the wonderful help Lydia E. Pinkham's Vegetable Compound has been to me.

I was like a crazy person; could not eat or sleep; there was no rest for me day or night.

Physicians examined me and said an operation was necessary. Before undergoing it, however, I determined to try Lydia E. Pinkham's Compound. I am so glad I did, for it cured me. I am a well woman now, and can do any kind of work.

I want this published throughout the land, so that all my suffering sisters may read, and if in any way affected with female troubles they may be induced by my sincere statement to try this wonderful Vegetable Compound and be cured.

MRS. MARGARET BAMFORD.

Intelligent women no longer doubt the value of Lydia E. Pinkham's Vegetable Compound. They openly acknowledge that it does positively cure the multitude of painful ailments peculiar to women. All Druggists sell it.

Lydia E. Pinkham's Liver Pills and Sanative Wash assist the Compound wonderfully.

The Lydia E. Pinkham Medicine Co., Lynn, Mass.

be discussed thoroughly. The rates slaughter-houses will pay are one cent per head; microscopic inspection, three cents per piece. On the basis of last year's inspection, this tax will net the Government \$840,314.86, which will be applied toward the expense of the inspection system. This tax will be placed on all meat intended for consumption as human food that is shipped from one State to another, or to foreign countries, but will not be imposed on meat intended for consumption within the limits of the State in which it is slaughtered.

THE AMERICAN HOG ABROD.

The Exportation of Pork Products for the Year 1896.

The exports of American hams amounted last year to 130,000,000 pounds, valued at \$12,000,000, and 103,000,000 pounds of this total were sent to Great Britain. The other countries with whom there was considerable trade in American hams were Canada, Cuba and Belgium.

The exports of bacon to Europe last year amounted to 425,000,000 pounds, of the value of \$33,000,000. More than three-quarters of the product was sent to the United Kingdom, and among other countries Brazil took an important place, which imports from this country 20,000,000 pounds, Germany following with 8,000,000, Canada with 7,000,000, Cuba with 6,000,000 and France with 4,000,000.

The exportation of lard is still another important item of American commerce, amounting last year to 510,000,000 pounds, of the value of \$34,000,000. In the consumption of this article of American export the supremacy of the United Kingdom is less marked than in hams and bacon, for although 200,000,000 pounds, about 40 per cent. of the total, went to England, Germany was a consumer to the extent of 120,000,000, or nearly 25 per cent. of the total. France followed with 32,000,000, Cuba with 26,000,000, and Brazil with 13,000,000 pounds. In this particular item of exports, as in other items, Cuba as a market for American products has lost its importance since the outbreak of the Cuban war, and furnished each month a steadily diminished market.

The exportation of fresh beef amounted last year to 225,000,000 pounds, of the value of \$19,000,000, and substantially all of this, except an infinitesimal portion sent to the West Indies, was sent to Great Britain.

Of the exportation of salted beef from the United States to foreign countries, one-half only was sent to the United Kingdom, the balance being distributed among the West Indian islands, Germany, Canada and South American countries, the amount exported to Cuba amounting to less than \$1,500 worth a year.



ABOUT WOMEN.

MRS. HENRY WARD BEECHER is sinking fast.

THERE IS AN OLD SAYING—however true it may be, or false, is not the question; there is an old saying that China is the land of flowers without scent, men without hearts, and women without souls.

THE STATISTICS SAY THAT more women than men live to be a hundred years old, but the few men attain to greater age, after they've once passed the century mark, than do the women.

MRS. HUNGERFORD—THE Duchess is dead. She wrote some 27 love stories in 20 years. The English-speaking women all over the world delight in her love stories with their inevitable saucy heroines and grave, silent heroes. Her first stories, "Phyllis" and "Molly Bawn," are the best.

LAST YEAR THE EMPRESS OF Germany ordered a brocade to be woven for her of the finest silk—white with a pattern of birds and flowers all over it. The raw silk itself in each yard was worth a hundred dollars, the entire cost being \$125 a yard. When the silk was sent to the palace for the Empress's approval she was so delighted with its beauty that she decided it would be a mistake to cut it up for a frock, and instead she used it for curtains, where the beautiful brocade shows to best advantage.

SURPRISING AS IT MAY SEEM, there are several widows of Revolutionary soldiers on our pension rolls, as well as seven truly daughters of the Revolution, who draw pensions for their fathers' services in Washington's armies. The youngest of these pensioners has seen 76 Summers; most of them are nearer the century mark. Inasmuch as the battle of Lexington was fought 121 years ago, the only explanation of these surviving widows is that they married men much older than themselves; and indeed one who was only 21 years old married, 52 years after the war, a soldier three quarters of a century old.

IT IS GENERALLY ADMITTED, says a London exchange, that there is a significance in names. Thus, Polly should be cheerful and lively; no one could imagine a silent and dull Polly. Sybil suggests softness and refinement, and Angelina sentimentality. Edith should be aristocratic, and Priscilla severe. Madeline is usually in novels a well-bred automaton; she dresses admirably, talks faultlessly, and acts becomingly. Ruth should be simple, genuine, winning, full of modesty, and sterling to the core. Pauline is supposed to be lackadaisical, pretentious and somewhat romantic. A certain hothouse aromatizing around Blanche and Berthe. They should be kept from the trials and troubles of a stormy world. Fanny and Kate are hoydenish and somewhat scatter-brained. Mary is all that is good. Annie, gentle, graceful and good looking. Maud, somewhat reserved and aristocratic. Mable is a flirt. Eliza, plain but good. Jane is good, serious, and impulsive on acquaintance. Ellen is not good looking, but what men call a thoroughly nice girl. Dorothy, sweet, simple and charming. Ethel, just an average girl and no more. But, after all, a rose by any other name would smell as sweet.

A STORY OF THE FRENCH REVOLUTION: At the time of the French revolution, Houdon, the celebrated French sculptor (whose statue of Voltaire we have all admired in the foyer of the Theatre Francais), was thrown into prison. Mme. Houdon, in despair, went to Barras, and with streaming eyes implored his assistance. Barras shook his head; he feared he could do nothing. Houdon was a man of genius, and, therefore, as David was one of the condemning judges, he feared there was little chance for his salvation. Mme. Houdon refusing to accept this opinion as final and using all the arts and beguilements of which an astute French lady is capable. Barras at last consented to ask her if her husband had any statue for sale at that time in his studio. Madame replied that the only finished statue at present in his atelier was a figure of Sainte Scholastica, holding a scroll of M.L. in her hand.

On hearing this the wily Barras rang the bell and said to his answering secretary: "M. Houdon has just completed a splendid statue of 'Philosophy Meditating on the Revolution.' Haste and purchase this sublime work of art, and have it placed in the Assembly. Barras' orders were carried out, with the result that not only was the sculptor's life spared, but he received more commissions for statues than he was able to execute. On such small issues did the men of men hang in those troublous times—*The Gentle Woman*.

FADS AND FASHIONS.

The little girls in their short skirts, neat leggins, little jackets with fur-trimmed collars, and their big hats or bonnets, are most picturesque; especially if the costume be all of one color, except for the fur and some white lace in the hat.

An attractive frock, taken from the *American Queen*, may be made of cashmere, ornamented with rows of narrow braiding; of silk, trimmed with bands of lace, or of gingham or lawn, with embroidery trimming. The fashion is too simple a one to need an explanation. The trimming is put lengthwise of the waist and short-sleeve puffs. It can be omitted entirely from the skirt. The ribbon is exceedingly graceful and stylish, and the frills above the high silken collar are the latest device for pretty-prettying one's frocks. For example, the dress may be copied



in silver-gray cashmere, with a small-patterned black silk braid for trimming, and with the belt and collar of black satin, black satin ribbons for the flying loops and ends, and soft, white lace for the neck and sleeve frills. For a black frock the style is easily adapted. For gingham frocks, with pretty embroidery and ribbons, it is equally effective.

The shirtwaist is waxing in popularity, rather than waning, and this Summer will see more and more elaborate ones than ever.

Skirts flounced, or tucked from the hem to the belt, and skirts trimmed up and down the gores, are here, and promise to be with us for four or five months longer. The tucked and ruffled skirts are only possible in fine, soft material—organzies, thin silks, lawns, and so on.

A fine line of jet beading down the seams of the front gore of a skirt makes a pretty panel effect.

Tucking for sleeves and yokes is most stylish.

White satin neck ribbons are all the go.

One may wear the soberest of dresses, but the hat is bound to be gay—cerise, magenta, violet, crimson, geranium, one or the other, or all sometimes—alas the day! are to be found on the hats.

The leather belt has disappeared from fashionable society's haunts.

Dark mink is particularly becoming to brunettes; the lighter shades should be left for the blonde women. Blue fox is a fur for blondes; Astrakhan and Persian lamb are becoming to all women. The gray furs should be avoided by colorless women, as should ermine. Ermine is a trying fur at best.

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Black taffeta ruffled with velvet ribbon promises to be fashionable for afternoon and evening frocks. Black taffeta, however, is a more or less harsh and gloomy material, and unbecoming, even when softened with the velvet.

Many of the new organdies look as though ink had been splattered over a light background, as the children do "splatter work."

Violet toques are very stylish.

Velvet ribbon edged with lace is used for trimming silk waists.

Satin ribbon is pretty for frills, for alapaca skirts.

Linen frocks will be much worn this Summer, and are very serviceable.

Guipure is popular, and has been for several years. It makes a handsome trimming.

Put a ruffle around the bottom of your kitchen apron; it will save the dress hem wonderfully.

HERE AND THERE.

One of the papers has a funny take-off on the Woman's Page. It describes how to make a refrigerator out of an upright piano. The instructions begin: "Carefully remove the key-board and viscera. Have some sheet-tin ready which you will cut with the scissor to the required size; have prepared a lot of powdered charcoal; sew the sheet-tin together with a very stout needle and thread and place it in the piano as a lining. In the interstices between the piano and its lining pour the charcoal (if any of the latter is left it will come in handy as a dentifrice), and, after you add a drain-pipe, your piano ice-box is complete."

It is quite a fad now to let babies and children go barefoot. It is argued that if the little one has never worn shoes and stockings, his feet will be no more sensitive than his hands, and that he will be the sturdier for being barefoot so much. Many little children—besides those who have to—go barefoot from early in the Spring until late in the Fall, and all the year round go barefoot in the house. But the little country boy knows best what to do. He leaves off his shoes and stockings when the first dandelion comes, and puts them on again at the first good nip that Jack Frost gives his toes.

Red and yellow lamp-shades give a light that is very injurious to the eyes, so all occultists say.

If soot be dropped on the carpet, sprinkle salt generously over it and brush up the soot and salt. The salt holds the soot and prevents a smudge.

A new idea for raising money for a church or charity is to have a genuine German Kaffee Klatsch—to serve coffee in big cups, with plenty of cream and sugar and all sorts of German coffee caker and buns, and gossip must not be omitted. The German maidens always gossip and whisper and confide little love stories of handsome Lieutenants, when they have their coffee at 4 o'clock in the afternoon. To return to Kaffee Klatsch for the church, charge 25, 30 or 50 cents for the coffee and cake, but don't have any admission fees.

A sponge soaked in water and kept wet, sprinkled with seed and hung in the window will soon be bright and green with tiny plants, and will be a continual joy to the children. Grass, clover, flax, or mustard seed can be used. A piece of coarse flannel well wet and put in a saucer and sprinkled with seeds will soon be a pretty mat of green if kept well moistened.

Many physicians argue that it is foolish to say that the exercise of bicycling is exactly like that of running the sewing machine; that bicycling is a thousand times more healthful, which will please the girls. While it is perfectly ridiculous to find a girl who can do a 30 mile run on a bicycle, but is too delicate to run the sewing machine or sweep the parlor, yet it is equally foolish to say that these house-keeping duties are just as good for bicycling. The one involves brisk exercise with shoulders straight and lungs taking in big quantities of fresh air, the others involve good enough exercise, but machine sewing usually involves bent shoulders, and sweeping means a work that will develop pretty arms but involves breathing an atmosphere so dusty that, unless the windows of the room be opened wide, it is actually injurious.

Another statement of physicians is that tea drinking is almost as bad for the women as whiskey drinking is for the men. Many women drink tea to excess, and thus ruin both nerves and digestion, temper and complexion.

There is frequent talk of the advantages to be gained from brushing the hair with a silk handkerchief. The idea is to rub the scalp well first with the handkerchief and then stroke the hair lightly with it, separating the hair into small strands for the purpose. The habit of this is of good size borne on long, slender flower-stalks. The habit of frost is over the suds can be placed in the hills, and the plant will not feel the shock of transplanting at all.

Mrs. E. G. Hill bears trusses of good size and shape. In color it is a lovely, pure pink overlaid with a delicate lavender shade, which gives to the flowers a beauty entirely its own.

Apricot is another fine double variety. With me it has proven an exceptionally good bloomer. In color it bears out its name, being a fine, clear apricot. The flower is very large and somewhat loose, which allows each individual floret to show off to the best possible advantage. In this way, it is claimed, large quantities of early onions are raised for market, as they bear transplanting safely, and attain a large and uniform size.—Mrs. O. W. CRAWFORD.

Another geranium, the name of which I cannot recall at this moment, is a prolific producer of clear lavender-colored blossoms, a most unusual color for a geranium.

There are many good white varieties, of which La Favorite is doubtless one of the best. It is pure white and entirely free from the greenish tinge generally seen in the white. Souvenir de Mirande is truly a gem, a blending of nearly-white and several shades of pink.

Mrs. WINSLOW'S SOOTHING SYRUP should always be used for children teething. It soothes the child, softens the gums, relieves all pain, cures wind colic, and is the best remedy for diarrhea. Twenty-five cents a bottle.

WOMAN'S WISDOM.

A Chapter on Geraniums.

Probably nothing else tends to cheerfully brighten a room, that may otherwise be quite commonplace, in so large a measure as a window or two filled with beautiful blooming plants. They cheer the passer-by and cause him to forget for the moment that mother earth still wears the white, fleecy mantle of Winter. To us within each upturned blossom seems like the face of a dear friend.

We watch the embryo bud, that the eye of the inexperienced would scarcely discover, hidden away so securely among the numerous green leaves. We tenderly nurse it day by day, until the delicate petals unfold and, lo, we have a blossom of rarest beauty. Not everyone can possess the rare exotics. Many of us, especially the busy farmers' wives, have little time to devote to the care and culture of house plants.

However, there are many plants that require comparatively little care, and repay one amply for the time bestowed upon them in their wealth of flowers. This is especially true of that well-known and rather old-fashioned stand-by, the geranium. Perhaps no plant is more universally grown, both by rich and poor, by the amateur as well as the professional florist, than this.

The double-flowered geranium is usually more highly esteemed than the single, but I scarcely understand why this should be; for, with the improvement that the single geranium has undergone in the hands of successful growers, it seems to me, it leaves little to be desired.

No collection of geraniums would be complete without the old rose variety. It is not grown for its flowers, which are insignificant, but for its foliage alone. I like to have several of them, so that I may cut liberally when I desire.

Mrs. Taylor is a variety that combines fragrant foliage with really pretty flowers. Then, there is another pretty variety, the leaves of which are marinated with pure white.

Of fancy-leaved varieties of the non-

odorous sort there is a large list to choose from.

Variegated geraniums are not intended for bloomers. Their beauty lies in the foliage alone, which is certainly pretty enough to make up for the insignificant flowers. Vari-colored geraniums should not be allowed to bloom, or it will detract from the beauty of the foliage. They should also have larger pots than the blooming kind, for plenty of space encourages luxuriant leaf growth; and this is just the reason why so many windows are burdened with barren geranium plants. A root-bound plant is generally a prolific bloomer.

I might go on almost, like the brook, forever, but will close, however much I should like to tell you of some of my other favorites. Anyone can have nice geraniums who follows my plan, and the pleasure derived from them in one Winter will repay many times over the care and time bestowed.—Mrs. HARRY TAPPAN.

Getting Ready for Spring.

Although the warm days of Spring are not yet with us, yet it is not a bit too early to begin, in a way, to make gardens of both flowers and vegetables.

So many of our annual flowers are best started in the house that one is often puzzled how to make room for them all. Many plants of small size are easily started in the margin of soil of large house plants, which chance to be in large pots. Then they would be certain to get the best of care.

Old tin cans, which can be placed in good positions on the kitchen windowsills, are good things in which to start many tender annuals, for not everyone can have a hot-bed for such purposes.

Many seem to find it a difficult matter to get plenty of soil in which to plant their seeds before the snow is gone, but there are usually to be found in most cellars, where owners cultivate flowers, a few pots or cans of soil which had once had flowers in them, which had either died a natural death or cold weather untimely stopped their growth. This soil, although somewhat impoverished, is good enough for starting seeds in.

Some of the larger flower seeds are more apt to germinate if soaked for a few hours in slightly warm water before planting.

In slipping plants for use in the flower bed the coming season, the "water method" will be found more certain than any other. In this method, if but a few slips are to be started, a cup or glass or any dish holding about half a pint of water will answer. It must be nearly full of water, then the slips should have their largest leaves removed, then they may be placed in the dish so that the water comes up to the leaves, but not over them. The leaves may rest on the edge of the cup and thus prevent the slip from becoming entirely submerged. In a few days the tiny roots will start, and in about two weeks they may be planted in a small pot and receive the usual treatment.

In starting early plants for the vegetable garden the necessary care given the tomato in its earliest stages is too well known to need mention; but methods of starting melons and cucumbers in the house are not so well known, owing to the difficulty with which such plants are transplanted. The safest method is to procure suds several inches square, turn upside down in old pans, and plant a few seeds in each suds; then place where they will be in the sunshine, and water daily. Then when the weather is warm and all danger of frost is over the suds can be placed in the hills, and the plant will not feel the shock of transplanting at all.

In country places it is often difficult to procure onion sets for the purpose of raising early onions.

In such a case, perhaps, what is known as the California method would be useful; that is, planting the onion seed in boxes of dirt in the house, or else in hot-beds, and transplanting the plants to garden beds about the time the seed is usually sown in the ground. In this way, it is claimed, large quantities of early onions are raised for market, as they bear transplanting safely, and attain a large and uniform size.—Mrs. O. W. CRAWFORD.

Practical Farming.

We feel that our readers a favor by calling their attention to an article by J. P. Vissering, Alton, Ill. It treats the cultivation of the experiences of some of the best farmers in relation to this useful plant. It treats of the different kinds, their size and enormous yield, often over 1,000 bushels to the acre. No farmer north or south can fail to derive profit from study of the counsel it gives. It can be obtained free. See his advertisement, page 8.

It is single, but fully as beautiful as the double.

Lumière Electrique is all its name implies. I never saw a single geranium that carried as large or as bold a flower. In color it is a peculiar crimson, soft and velvety, with bright-orange center.

Gloire de France is a double of delicate rose-pink. I like Asa Gray better, however, though the color is not so delicate.

Golden Dawn has, I think, been lauded beyond its merits. It certainly is not yellow.

The double-flowered geranium is usually more highly esteemed than the single, but I scarcely understand why this should be; for, with the improvement that the single geranium has undergone in the hands of successful growers, it seems to me, it leaves little to be desired.

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During the Parade.

Bystander—Doesn't that panther's screams frighten your horse?

Driver—No; he's used to having a woman drive him.

The Stranger's Mistake.

"Well, little chap," said the stranger in the family, picking up one of the children, "what are you going to be when you're a man?"

"Nuffin'," said the child.

"Nothing? Why so?" asked the stranger.

"Because," said the child, "I'm only a little girl."—*Harper's Round Table*.

One Good Reason.

Mrs. Warmheart—My good man, why do you let your children go barefoot?

Pat O'Hoolihan—For de raison, ma'am, dat I have in my family more feet than shoes.—*Harper's Round Table*.

Thanksgiving at a Colored Boarding House.



Mr. Newsome (the carver)—Miss Clufey, would you have some ob de fowl?

Miss Clufey (thickly, as the bird slides off the dish)—Thanks, Mistah Newsome, but I's would rather hab or little at er time.—*Texas Sifters*.

How He Escaped.

"Say, Jimmie, 'd yer ma lick yer?"

"Naw, you bet she didn't."

"Gee! you go off easy."

"Yep; you see she was afraid I'doller so loud, I'd wake the baby."—*Philadelphia Inquirer*.

Only a Suggestion.

Young Lawyer (on his first case)—I'd give most anything to win this case—but—I don't see how I can possibly clear you.

Prisoner (modestly suggestive)—I isn't s'pose yer'd want ter go on to stand an' swear yer committed de crime yourself, would yer?—*Judge*.

A Startling Diagnosis.

"Good mawmin', Rastus. How's all folks down to youah house?"

"Dey's all right smaht, Mistah Johnsing, 'captin' ole man. But pap's pow'ful bad, sah, fer a fac."

"You doan say so now. What's de deatch wif ole man, anyhow?"

"Well, he's hevin' a pow'ful bad time wif his frost. Hes bref comes like a ole bellows, an' he doan say his mof' tastes jest like a hen-roost."

"I want ter know now. Hez yer hed de doctah yit?"

"O, ya-as, he wuz down dar yestah-day."

"An' what's he say?"

"O, he 'zaminid pap's frost, and he done say de epiglottis am all glottid and de mucilage membrane am all inflammatid ez fur down ez de eye kin reach."

"Sa-ay, now, Rastus, dat air looks kin' o' lugubrious fer de ole man, suah 'ut!"—*Texas Sifters*.

Whittlings.

"Paw," said the little boy, "did you know that the house fly lays more'n a million eggs?"

"Maybe she does, Willy," answered his baldheaded parent, "but I'll be eternally dinged if I can tell when she takes the time."

Little Bear—Say, Pop, here comes one of those boy hunters.

Papa Bear—Too bad, just as we have finished our dinner—but no matter, he will do for dessert.—*Twinkles*.

Smith—Made any new year resolves yet?

Brown—Yes, several.

Smith—What were they?

Brown—I just forgot now what they were.

A Catastrophe.

The train was roaring along about 40 miles an hour, and the conductor was busily punching tickets full of holes, when a little thin old man who sat in one of the corner seats plucked his sleeve.

"Mister conductor, you be sure and let me of at Speers Station. You see,

THE DAIRY.

A little care in looking after them, will show that some cows in the dairy give a much better return for the food consumed than others. This is where to "take lessons" in the art of feeding.

Keep stalls well bedded if the best yield of milk is desired. Bedding is not necessary to keep cows clean in a well constructed stall, but a soft, warm bed is a great promoter of milk secretion.

Pigs are necessary on a dairy farm if we want the best results. The pig can utilize the skim milk to better advantage than any other animal, and the skim milk is an important product of the dairy farm.

Nine-tenths of the cheese produced in this country is made in the States of New York, Wisconsin, Ohio, Illinois, Vermont, Iowa, Pennsylvania, and Michigan, ranking as to production in the order named.

Cracks in the barn cost many a pound of hay and ground feed. Battens are far cheaper. They will, in the course of a few years, work up at the edges, but a few nails and a little time will make them all right again.

The keeping of common cows in a common way never gives the results of dairying we see reported in the papers. It takes good cows and good management at every point from feed-yard to market to make a marked success at dairying.

It is no more work to make good butter than it is to make the poor stuff, but the difference between the two is great. The man that makes butter of inferior quality labors for a very low profit or none at all, while the maker of the better quality of product does no more work, but is able to realize at least a fair profit.

In purchasing a new cow, regard not only her breed and lacteal characteristics, but the way she has been "brought up." The general appearance of the farm or dairy alone from which she was born will often give you a pretty clear insight into the latter. Select your cows with care. Don't let a love for breed override your better judgment as to grave faults they may possess.

We have it from the lips of a prominent practical dairymen who quotes thus: "During the Winter the cows should be cared for in such a way as to keep them in good health, and gaining a little in flesh, because cows that are well fed in Winter give milk for a longer period and in larger quantity during the following Summer than cows which have been treated otherwise."

"I have paid almost all the mortgage on our place by the milk money, and my husband did not know for a long while the source of my income. While our neighbors, who have depended on straight farming, have suffered, and some of them have lost their places, we have saved money and are all right." She was one of the frontier women who have done so much to build up the West.

The creamery is reaching out to the furthest places of the West for a market, and all the mining camps are now depending on the plains for butter and cheese. The Mexican trade is also coming to the front because of the increase of the refrigerator cars, which makes it possible to take the product to its destination in good condition.

The cattle that were once supposed to rustle for themselves through the Winter are now carefully shelled and their increase is saved with solicitude, for the farmers are seeing that herein lies the way to better times. Twenty ears of corn take about the same money in the market as one ear of butter. The latter pays little more freight than one of the ears of corn. Here the farmer finds the solution of the freight rates, and if he can work along this line people will see and hear less of the dissatisfaction that has become so common in many sections. The West is all right, if the right way to use it is found. The humble cow is pointing out one way that promises to be very successful.

The cheese makers of Minnesota have been more or less discouraged for several years past. But last season and the season before, the decline in the price of creamery butter gave an impetus to the cheese industry, and it has been the means of greatly increasing the output of the edible. There is no valid reason why there should not be within the next two years a doubling up in the cheese business. All admit that there is more money in it than in butter.

The plant of the Anderson creamery at South Bend, Ind., has been sold to E. C. Handy, of Toledo, O., for \$2,200.

At an annual meeting of the Ludlow, Vt., cheese factory the patrons received \$1.13 per 100 pounds for October milk.

Charles Austin is fitting up a creamery with modern apparatus at Deer River, N. Y., and will engage in the manufacture of butter.

The Fredonia, N. Y., canning company will manufacture condensed milk at Fredonia, which will more than double their present business.

The milk producers of Northboro, Mass., have organized, starting with 70 members. President, John K. Mills; Secretary, Edwin H. Bemis.

The dairymen in and near Chester, N. H., expect to have their new creamery association organized last month.

The Shelburne Falls, Mass., creamery is making nearly a ton of butter a week. Quite a New York City trade is being developed in fresh butter. Many patrons there want it made without any salt and shipped the day it is made.

The Adrian, Minn., Separator Creamery Co. paid its patrons 20 cents a pound for butterfat for the month of November; the average test was 4.6. They are receiving 6,000 pounds of milk every day, and it is increasing daily.

Essentials of a Dairy Farm.

A United States Agricultural Department bulletin makes the following summary of what is essential in the successful operation of a dairy farm:

A roomy, clean, dry, light and well-ventilated stable or cow house. To produce good milk, cows must be comfortable, and these conditions not only add to their comfort, but are absolutely necessary to keep them in the best of health.

Healthy and clean cows, which appear well fed and contented.

An abundance of pure water, to which cows are given access at least twice a day.

Feed of good quality; the grain and coarse fodder should be free from dirt, decay or a musty condition.

A spirit of kindness towards the stock exhibited by every one employed about them, and gentleness of the animals themselves.

Provision for washing and sterilizing or scalding of utensils which come in contact with milk.

Provision for straining, aerating and cooling the milk in a clean atmosphere, free from all stable and other odors. This treatment should take place immediately after the milk is drawn from each cow.

Facilities for storing milk and keeping it cold.

Especially great cleanliness in regard to everything connected with the dairy.

The atmosphere of the stable should be pure and free from dust when milking is

being done. Employees should carefully wipe the udders and wash their hands before milking, and should be in clean clothes. Whitewash is a good disinfectant, and should be seen in many more stables, and laud plaster should be sprinkled about to absorb moisture and odors.

COWS ARE SAVING KANSAS.

A New Way to Pay Off Farm Mortgages Discovered by the Women.

The cow is saving the farmer of the plains. She is not the handsomest of his possessions, but as she is coaxed into a corner of the yard and gives her milk she does more to pay off the mortgages than any of the fancy investments of which the Western farmer has been so proud. The last few years have been hard ones for the dweller on the prairie plains. He has found the price of grain low and the yield light. He has experimented, and found the end vexations. Now he is undertaking something that is more certain, though slower. The creamery is being brought to the front and promises to be the coming favorite in all the prairie regions where the possibilities of diversified farming are understood.

In Kansas scores of creameries are being built each month. Less than 10 years ago the first creamery was established in this County, and it was one of the first in the State. Now there are 15 in this County, and of the 2,600 families in the farming communities 1,700 take to the factory each morning a greater or less supply of milk. They get from \$5 to \$100 each month for milk the year round. The average is about \$10, and the total is nearly \$300,000 annually. That means much to the settlers, who are thus enabled to have a steady income not dependent on the rainfall or the winds.

The prairie women are responsible for the great advance made in this direction. They were the first to see the profit to be gained from the little things on the claim. The hens are said to have saved Nebraska, and the humble cow is doing as much for Kansas. Said one woman the other day:

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THE ORCHARD.

FRUIT IN NEBRASKA.

Assuming Large Proportions in Some Portions of the State.

The Auburn (Neb.) Post has taken the trouble to write to the different station agents of Nemaha County to get the number of barrels of apples shipped from their respective stations during the past year and the average price paid. All but two agents have reported, Howe and Peru. The figures show that there have been 160 carloads of apples shipped from Nemaha County the past season, some going South, but the most going to Iowa, Minnesota, the Dakotas, Colorado and the western part of this State. The cars have averaged over 500 bushels, the total number of bushels being 38,126. The price paid for the apples has been 25 cents to 35 cents per bushel. The total amount of money paid to the farmers for their fruit as averaged by the price paid at the different stations amounted to \$25,266. These figures are probably as accurate as it is possible to get them. Some stations reported about Dec. 1, and others not until Jan. 1, so that there may have been some apples shipped after the report was made. But it is sufficiently accurate to show that the apple crop of Nemaha County is one of considerable importance at present, when not over one-half of the trees of the County are old enough to bear, for there have been young apple orchards set out in this County during the past few years. That Nemaha County fruit took the first premium at the State Fair last Fall shows the excellent quality of our fruit.